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Are Common Bird Name Changes Necessary?

Till recently name changes were a veritable and regular source of confusion confined largely to botanists. This 'headache' has now begun to creep into the field of ornithology. Unlike in the case of plant names, where the taxonomists never bothered to agree (or disagree!) about the common names of the plants in contention but were at odds to reconsider their scientific names, ornithologists are now agitated over the "English" common names of birds.

The idea to have the same common "English" names for all the birds all over the world is somewhat conceited (for the French are not going to like it!), but it is possible since it concerns less than 10,600 species - unlike the multitude of plants or insects that swamp the world. In addition, the abundance of amateurs (bird watchers) in the field of ornithology warrants such a venture. On the other hand, scientific name changes for birds will necessarily have to be effected according to the dictates of the International Code of Nomenclature, and many drastic changes are foreseen with the advent of DNA based techniques (compared to the earlier criteria used). In this article, we skirt the issue of scientific names, and look into the issue of common names.

Most, if not all, of the common English names presently being used for Indian birds were given by the British, as they were the pioneers in the systematic study of birds in the Indian subcontinent. For some of the species, the names were coined with supposedly due regard for the local names or if they took a fancy for the local names. An example is the Koel *Eudynamys scolopacea*, which could have been named as the Black Cuckoo if local considerations were not regarded. Very few name changes occurred in India after the publication of Salim Ali and Dillon Ripley's Handbook and also the latter's Synopsis during the sixties and seventies, both of which are regarded as the Bible for Indian ornithologists and birdwatchers. Prior to this, the major bird books of the Indian subcontinent were by Jerdon (1862-64), Oates and Blanford (1888-98) and Baker (1922-30), and some changes in common names did occur, especially by Baker, who was the first to adopt the trinomial system for Indian birds.

The recent imbroglio regarding common names (and scientific ones too) arose after the publication of Sibley and Munroe's Distribution and Taxonomy of Birds of the World in 1988, wherein they had made major changes in the classification of birds based on the DNA structure. Their work has turned the presently followed classification topsy-turvy, and now the megapodes are at the top of the classification order instead of the Gaviidae. This classification has been accepted by bodies like the Birdlife International and Oriental Bird Club, but not by the ornithologists in the country of origin of its authors! American ornithologists will wait for the new American Ornithologists Union (AOU) checklist, and it appears that not all of Sibley and Monroe's changes will be accepted. Also, the recent advances in DNA analysis make the DNA-DNA hybridisation technique used by Sibley and Munroe a crude molecular method of estimating raw similarity in the genome of different taxa. Molecular data for phylogeny estimation now comes mostly from the actual nucleotide sequences, with aligned sequences being treated just like any other character data (e.g. morphology-based character data). Thus, it appears, it will take some time for a new classification to be established world-wide, and till then in India, it is better to be conservative and follow Salim Ali and

Ripley's classification for Indian birds.

However, another major controversy was raked up by the same authors, in that they arbitrarily (unlike in the case of their reclassification based on DNA findings) changed the common names for many bird species, which later found favour with the International Ornithological Congress in its search for an agreement on the standardisation of common (English) names. Besides causing annoyance to bird watchers and ornithologists of the Indian subcontinent and probably elsewhere, it has also created unnecessary bad blood between authors of field guides. Many of the names for Indian birds have been in use for more than a century, and unless really justified on grounds of upgradation of subspecies into species or for other valid reasons, name changes should be avoided for reasons of antiquity alone. In India, the issue of name changes especially began to make its ramifications felt with the recent publications of Inskipp (1985) and Roberts (1991), with both taking divergent views on the subject.

Here, we briefly look into some of the name changes of birds of the Indian subcontinent (name change sources: Pittie & Robertson 1993 and Ripley - in press). We seek not to add to the controversy, but consider how valid or unwarranted they are, and forward suggestions where further decisions can be taken. The same issue in more detail (with a checklist of the birds of the Indian subcontinent, the recent name changes, and comparisons to their names during the last and early part of this century) will be brought out as a separate publication of the ENVIS Centre and will be made available to ornithologists of the Indian subcontinent. It is also suggested that there should be a conference or congress where the issue on common bird names for the Indian subcontinent can be finally agreed upon, possibly with the help of our intended publication. The Pan Asian Ornithological Congress could be an appropriate forum for this purpose. After a preview of the drafts of the intended document, the following points are expressed by us:

a) In quite a few cases, the names had to be changed as subspecies were upgraded to the level of species. An example is the Black Kite or Pariah Kite *Milvus migrans*, now the two subspecies have been upgraded as species, with the names of Black *Kite Milvus migrans* and Black-eared Kite *Milvus lineatus*. In this and the 40 odd other cases, there can be no dispute regarding the necessity for name changes.

b) In some cases, it has been changed to correct wrongly given names, for example giving the descriptive name of 'redheaded' to a species, when only top of the head (crown) is red. In such cases, the names have been changed to 'redcapped' or 'redcrowned'.

c) The name changes are to be welcomed in cases where the family name has been added to a species's common name - which did not earlier have the tag of the family name. Examples are, Coppersmith (*Megalaima haemacephala*) to Coppersmith Barbet, Rubycheek (*Anthreptes singalensis*) to Rubycheeked Sunbird and Houbara (*Chlamydotis undulata*) to Houbara Bustard. Such changes are especially useful to bird watchers in a foreign country to easily know what type of bird is being referred to - e.g. Coppersmith and Coppersmith Barbet. Such name changes are also beneficial in the case of storage of general bibliographic databases. An ornithologist, feeding the index of barbet in a computer's retrieval system for references on the barbet family, would miss out the Coppersmith if it did not carry its family name (unless he goes by scientific names). In some cases, the name changes were necessary. An example is the desired change of Green Pigeon (*Treron phoenicoptera*) into Yellow-fronted Green-

Pigeon, as in the case of the rest of the green pigeon species, where a descriptive name precedes the family name.

d) For the same reason as mentioned in point c, the removal of family names from species (e.g.,

Indian Goldenbacked Threetoed Woodpecker (*Dinopium javanese*) to Common Flameback, Besra Sparrowhawk (*Accipiter virgatus*) to Besra, Openbilled Stork (*Ciconia episcopus*) to Asian Openbill, Broadbilled Roller (*Eurystomus orientalis*) to Dollarbird, Stub-tailed Bush Warbler (*Urosphena squameiceps*) to Asian Stubtail (!) and deletion of appendix 'flycatcher' from the fantail flycatcher group are wrong steps.

e) Some of the name changes appear to be totally unwarranted and insensitive to the locals! A classic example is the case of renaming the Great Indian Bustard *Ardeotis nigriceps*, which existed only in the Indian subcontinent and is presently recorded only in India, to the Indian Bustard. For those who have worked on or seen the species, removal of the adjective Great from the species would be a gross affront to the bird. In addition, the species has been cited quite frequently in India by its former name in a number of newspapers, popular articles, scientific journals, books and pamphlets, and thus such an arbitrary name change is unwarranted. Another example of inappropriate renaming is the case of the Indian Great Black Woodpecker *Dryocopus javensis*, a species almost wholly black except for a red crest and a white belly, which has been renamed as the White-bellied Woodpecker!

After an overview of the changes, the following suggestions are given with regard to name changes:

1) A species should not have the same name as another species in any part of the world.

2) A species should not have different names in different countries. In such cases, the name more commonly accepted in most areas could be accepted, e.g., the Woolly-necked Stork instead of White-necked Stork. It is suggested that sometimes the less common name may be selected if it appears more appropriate. In the case of the Woolly-necked Stork versus White-necked Stork, the latter is more appropriate - who has heard of a bird being associated with wool, except maybe for nest material! The same should apply for family names - Avadavat to Munia and Crow-pheasant to Coucal, or vice versa.

3) Family names of birds should accompany each species, e.g. Coppersmith to Coppersmith Barbet, Houbara to Houbara Bustard.

4) Deletion of existing alternate common names where they already exist for Indian birds. Examples are Black Drongo or King Crow (*Dicrurus adsimilis*), Haircrested or Spangled Drongo (*Dicrurus hottentottus*) , Crow-pheasant or Coucal (*Centropus sinensis*), Spotted or Dusky Redshank (*Tringa erythropus*), Cape Pigeon or Cape Petrel (*Daption capense*), where one of the two names for each species could be deleted.

5) The new names* aims to use proper grammar by the use or removal of hyphens, where it appears grammatically correct or incorrect. It is felt that since proper nouns are exempted from the preview of correct grammar or spelling, hyphens are best done away with for brevity's

sake or avoided as much as possible. Many of the hyphens used by the earlier field guides were omitted by Ali & Ripley, probably for the same reason, e.g. Large Whistling-Teal (*Dendrocygna bicolor*) to Large Whistling Teal and Yellow-fronted Woodpecker (*Picoides mahrattensis*) to Yellowfronted Woodpecker. It is suggested that one either accepts or discards hypenation in all cases, or separate them (Sparrow Hawk). If this is done, then an ornithologist or bird watcher will not need to use a field guide to check the way a species name is written - unless he/she is unsure of the spelling!

6) Where more than one species occurs in a country or region, country or regionwise names without the tag of an additional descriptive name will require changes. For example, the name of Indian Sandgrouse (*Pterocles exustus*) has been intentionally or inadvertently changed to Chestnut-bellied Sandgrouse, as is needed to be done, as there are other resident species of the same family occurring in India. Similarly, the Jerdon's Courser *Rhinoptilus bitorquatus* is more 'Indian' than Indian Courser *Cursorius cursor*, as the former is found only in India, while the latter's range is also in Pakistan, Nepal and Sri Lanka (thus a species of the Indian subcontinent, rather than India). Hence, the latter species name needs change - which has not been done in the new name changes.

7) Uniformity and proper logic in renaming is advised. For example the Short-toed Eagle (*Circaetus gallicus*) has been renamed as the Short-toed Snake-Eagle, while the other largely snake eating eagles have the appendix Serpent-Eagle. Similarly the White-throated Munia (*Lonchura malabarica*) has been renamed as the White-throated Silverbill - why not White-throated Munia or Avadavats as in the other species? A good example of better reasoning in renaming, is the change of the bird group Fishing-eagle to Fish-eagle.

To sum up, it is again suggested that there should be a forum to decide on the issue of common names for birds. Till then, it is better to stick to the last global list that was widely
accepted - the Peter's Checklist. It may be argued by some that with the publication of the recent field guides which had adopted the new names, the suggestions in this article for an Asian consensus on deciding on the common names is too late. This is only a self-defeating attitude and will not solve the problem, as earlier authors can also stick to the same old names for the same reasons.

*Pittie & Robertson have omitted hyphens in adjectivial cases (e.g whitethroated instead of white-throated) but have retained them in case of bird groups (e.g. Hawk-Eagle). The new names listed in Ripley's new book uses hyphens in both the instances, as Carol & Tim Inskipp.

REFERENCES

Ali, S. & S.D. Ripley (1983). Handbook of the Birds of India & Pakistan. Compact Edition. Oxford University Press, Bombay.

Baker, E.C. Stuart (1922-30). Fauna of British India. Birds (2nd Edition). 8 volumes. Taylor & Francis, London.

Inskipp, C. & T. (1985). A Guide to the Birds of Nepal. Croom Helm, London.

Inskipp, C. & T. (1995). Bird Classifications. *Sanctuary.* XV (50): 84-105.

Jerdon, T.C. (1862-64). The Birds of India. 2 volumes (3 parts). Published by the author, Calcutta.

Oates. E.W & W.T. Blanford (1889-98). Fauna of British India: Birds (1st Edition). 4 volumes: (Vol. I & II by E.W. Oates 1889-90, Vol. III & IV by W.T. Blanford 1895, 1898). Taylor & Francis, London.

Pittie, A. & A. Robertson (1993). Nomenclature of Birds of the Indian Sub-continent. Ornithological Society of India.

Ripley, D. (in press). Field Guide for the South East Asian Birds, Smithsonian Institution.

Roberts, T.J. (1991). The Birds of Pakistan. 2 volumes. Oxford University Press, Karachi.

Sibley, C.G. & B.L. Munro (1988). Distribution and Taxonomy of Birds of the World. Yale University, USA.

Early Books On Birds Available With The BNHS Library

The Bombay Natural History Society, being more than a century old, is fortunate in possessing a large collection of old books on wildlife, many of which are not available in libraries elsewhere. Though many of these books were anecdotal in nature and written in the old leisurely prose of a bygone era, quite a few are still source material for accounts on the early distribution and abundance of wildlife in the Indian subcontinent. Many of the ornithological illustrations in these books are truely magnificient, and special mention may be made of the well known John Gould's, Birds of Asia published between 1850 to 1873. A limited edition of this book was printed - one set is held by the BNHS - and it is now a collector's prized possession. A lesser known book with exquisite and artistic illustrations is that of R.C. Wright and Douglous Dewar, The Ducks of India. Dewar says in the preface that he had apprehensions about writing the book after a suggestion by Wright and adds, When I saw some of Mr. Wright's paintings on birds, I felt that they ought to be published, even at the risk of financial loss. The beauty of the plates can soon be appreciated by the present generation in the form of a calendar or greeting cards, to be brought out by the BNHS. Another book by Douglas Dewar, Game Birds, published in 1928, has wood engravings for its plates. The BNHS was the publisher of some of the early books, e.g. Stuart Baker's The Indian Ducks and

their Allies (1908), Gamebirds of India Burma and Ceylon (1921-30) and R.S.P. Bate's Bird Life in India (1931).

Quite a large number of these books on wildlife concern birds, as many of the British officers stationed in the Indian subcontinent and some of the rulers of the princely states were keen bird watchers, either for study, shikar, or the sheer pleasure of watching them. The Britishers especially, were worshippers of the written word, and quite a few of them recorded their observations in the form of detailed field notes, which came in handy in the writeup of books either by them or others. In addition, the abundance of wildlife in those days permitted shooting and collection of bird skins for research at numbers quite unimaginable nowadays. An indication of the former abundance of wildlife in the past may be judged by the note of a shikari in the now defunct Oriental Sporting Magazine, who mentioned that between 1809 and 1929, he himself shot no less than 961 Great Indian Bustards *Ardeotis nigriceps* in the neighbourhood of Ahmednagar - which is about the population of the species in the world now!

Given below is a selected list of the major books on birds of the Indian subcontinent till the 1950s, which are available for reading or reference at the BNHS:

Baker, E.C. Stuart (1908). The Indian Ducks and their Allies. Bombay Natural History Society, Bombay.

Baker, E.C. Stuart (1913). Indian Pigeons and Doves. Witherby & Co., London.

Baker, E.C. Stuart (1921-30). Game Birds of India, Burma and Ceylon. 3 volumes. Bombay Natural History Society, Bombay.

Baker, E.C. Stuart (1922-30). Fauna of British India: Birds (2nd Edition). 8 volumes. Taylor & Francis, London.

Baker, E.C. Stuart (1923). A Handlist of the Birds of the Indian Empire. Bombay Natural History Society, Bombay.

Baker, E.C. Stuart (1932-35). The Nidification of Birds of the Indian Empire (4 volumes). Taylor & Francis, London.

Baker, E.C. Stuart (1942). Cuckoo Problems. H.F. & G. Witherby, London.

Baker, H.R. & C.M. Inglis (1930). The Birds of South India. Government Press, Madras.

Barnes, H.E. (1885). Handbook of the Birds of the Bombay Presidency. Central Press, Calcutta.

Bates, R.S.P. (1931). Bird Life in India. Bombay Natural History Society, Bombay.

Bates, R.S.P. & E.H.N. Lowther (1952). Breeding Birds of Kashmir. Oxford University Press, London.

Dewar, D. & G.A. Levett-Yeats (1923). The Common Birds of India. Thacker, Spink & Co., Calcutta.

Dewar, D. (1906). Bombay Ducks. John Lane The Bodley Head, London.

Dewar, D. (1909). Birds of the Plains. John Lane The Bodley Head, London.

Dewar, D. (1915). Birds of the Indian Hills. John Lane The Bodley Head, London.

Dewar, D. (1916). A Bird Calendar for Northern India. W. Thacker & Co., London.

Dewar, D. (1923). Himalayan and Kashmir Birds. John Lane the Bodley Head, London.

Dewar, D. (1923). Birds at the Nest. John Lane the Bodley Head, London.

Dewar, D. (1923). Indian Birds. John Lane the Bodley Head, London.

Dewar, D. (1924). Birds of an Indian village. Oxford University Press, Bombay.

Dewar, D. (1928). Game Birds. Chapman & Hall, London.

Dewar, D. (undated). Glimpses of Indian Birds. John Lane the Bodley Head, London.

Dharmakumarsinhji, R.S. (1954). The Birds of Saurashtra. Times of India Press, Bombay.

EHA (E.H. Aitken) (1947). The Common Birds of India. 3rd Edition. Thacker & Co., Bombay. (A reprint, edited with notes by Salim Ali).

Fairbank, H. (1921). The Waterfowl of India and Asia. Published by the author.

Fairbank, H. (1921). Birds of Mahableshwar. Published by the author.

Finn, F. (1909). The Waterfowl of India and Asia. Thacker, Spink & Co., Calcutta.

Finn, F. (1915). Indian Sporting Birds. Thacker, Spink & Co., Calcutta.

Finn, F. (1915). Garden and Aviary Birds of India. 2nd Edition. Thacker, Spink & Co., Calcutta.

Finn, F. (1916). The Game Birds of India and Asia. Thacker, Spink & Co., Calcutta.

Finn, F. (1917). The Birds of Calcutta. 3rd Edition. Thacker, Spink & Co., Calcutta.

Fletcher, T.B. & C.M. Inglis (1936). Birds of an Indian Garden. Thacker, Spink & Co., Calcutta.

Gould, J. (1832). Century of Birds from the Himalayan Mountains. Published by the author.

Gould, J. (1850-73). Birds of India. 6 volumes. Published by the author.

Henry, G.M. (1927). Coloured Plates of the Birds of Ceylon. Part I & II. Published by the Ceylon Government.

Hume, A.O. (1869). My Scrap Book, or Rough Notes on Indian Oology and Ornithology. Baptist Mission Press, Calcutta.

Hume, A.O (Editor). (1872-1899). Stray Feathers (Journals). 12 volumes. Published by the Editor.

Hume, A.O. (1873). Contributions to Indian Ornithology. L. Reeve & Co., London.

Hume, A.O. & C.H.T. Marshall (1879-80). Game Birds of India, Burmah and Ceylon. 3 volumes. Published by the authors.

Hume, A.O. & E.W. Oates (1889-90). The Nest and Eggs of Indian Birds. 3 volumes, 2nd Edition. R.H. Porter, London.

Inglis, C.M. (undated). Sixty-eight Indian Birds. Natural History Museum, Darjeeling.

Jerdon, T.C. (1862-64). The Birds of India. 2 volumes (3 parts). Published by the author, Calcutta.

Jerdon, T.C. (1864). The Game Birds and Wildfowl of India. Military Orphan Press, London.

Legge, W.V. (1873). A History of the Birds of Ceylon. Taylor & Francis, London.

Le Messurier, A. (1904). Game, Shore and Waterbirds of India. 4th Edition. W. Thacker & Co., London.

Lowther, E.H.N. (1949). A Bird Photographer in India. Oxford Univeristy Press, London.

Mackintosh, L.J. (1915). Birds of Darjeeling & India. Banerjee Press, Calcutta.

Marshall, G.F.L. (1877). Birds Nesting In India. Central Press, Calcutta.

Murray, J.A. (1888, 90). The Avifauna of British India. 2 volumes. Education Society Press, Bombay.

Murray, J.A. (1889). The Edible and Game Birds of British India. Education Society Press, Bombay.

Oates, E.W. (1883). Birds of British Burmah. 2 volumes. R.H. Porter, London.

Oates, E.W. (1898-99). A Manual of Game Birds of India. Part I - Landbirds, Part II - Waterbirds. Published by the author. (Note: Only part II available with the BNHS library now).

Oates. E.W & W.T. Blanford (1889-98). The Fauna of British India: Birds (1st Edition). 4 volumes: (Vol. I & II by E.W. Oates 1889-90, Vol. III & IV by W.T. Blanford 1895, 1898).
Taylor & Francis, London.

Palin, H. & C.D. Lester (1904). The Birds of Cutch. 2nd Edition. Times Press, Bombay.

Smythies, B.E. (1953). The Birds of Burma. 2nd Edition. Oliver & Boyd, London.

Wait, W.E. (1931). Manual of the Birds of Ceylon. 2nd Edition. Director, Colombo Museum.

Whistler, H. (1935). Popular Handbook of Indian Birds. 2nd Edition. Gurney & Jackson, London.

Wright, R.C. & D. Dewar (1925). The Ducks of India. H.F. & G. Witherby, London.

AMSAR SITES

WETLANDS

Wetlands are the areas covered with standing shallow water with vegetation and organisms adapted to that habitat. They include marshes, swamps, flood-plains, shallow ponds and tidal marshes. Wetlands provide a variety of resources such as food, fodder, fibre and fuel. Abundance of macrophytes and their species richness are valuable characteristics of a wetland, which provide shelter, food and nesting and breeding sites for most of the waterfowl, fish, frogs, invertebrates etc. Wetlands are presently being drained, filled and reclaimed for short-term economic gain.

RAMSAR SITES

An intergovernmental treaty, the Ramsar convention, was signed in 1971 at Ramsar in Iran for the conservation of wetlands of international importance, especially as water-

fowl habitat.

The Ramsar Convention on Wetlands of International Importance defines them as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres".

In the United States of America, the US Department of Interior, Fish and Wildlife Service followed the definition of Cowardin *et al.* (1979), according to which wetlands are "...lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water ". Wetlands must have one or more of the following three attributes:

(1) at least periodically, the land supports predominantly hydrophytes.
(2) the substrate is predominantly undrained hydric soil.
(3) the substrate is non-soil and saturated with water or covered by shallow water at some time during the growing season of each year.

Among the above stated definitions for wetlands, the Ministry of Environment and Forests, Government of India, has adopted the IUCN definition which is used by the Ramsar Convention for the purpose of its wetland conservation programme.

The fourth meeting of the conference of contracting parties to the Ramsar Convention at Montreux, Switzerland, 1990 determined the following criteria for identifying wetlands of international importance:

Criteria for representative or unique wetlands

A wetland should be considered internationally important if :

(a) it is a particularly good representative example of a natural or near-natural wetland, characteristic of the appropriate biogeographical region; or

(b) it is a particularly good representative example of a natural or near-natural wetland, common to more than one biogeographical region; or

(c) it is a particularly good representative example of a wetland, which plays a substantial hydrological, biological or ecological role in the natural functioning of a major river basin or coastal system, especially where it is located in a transborder position; or

(d) it is an example of a specific type of wetland, rare or unusual in the appropriate biogeographical region.

General criteria based on plants or animals

A wetland should be considered internationally important if:

(a) it supports an appreciable assemblage of rare, vulnerable or endangered species or subspecies of plants or animals or an appreciable number of individuals of any type or more of these species; or

(b) it is of special value for maintaining the genetic and ecological diversity of a region because of the quality and peculiarities of its flora and fauna; or

(c) it is of special value as the habitat of plants or animals at a critical stage of their biological cycle; or

(d) it is of special value for one or more endemic plant or animal species or communities.

Specific criteria based on waterfowl

A wetland should be considered internationally important if:

(a) it regularly supports 20,000 or more waterfowl; or

(b) it regularly supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity; or

(c) where data on population are available, it regularly supports 1% of the individuals in a population of one species or subspecies of waterfowl.

By 1993, more than 75 countries had become parties to the Ramsar convention. One of the obligations under the treaty is to designate wetlands of international importance for inclusion in a list of the Ramsar sites. Already, more than 600 wetland sites have been added to the Ramsar list, covering more than 30 million hectares of wetland habitat. In addition, parties are obliged to wisely manage the wetlands in their territories.

SOURCES:

Chatrath, K.J.S. 1992. Wetlands of India. Ashish Publishing House. New Delhi-26.

Cowardin, L.M., V. Carter, F.C. Gollet & E.T. LaRoe. 1979. Classification of Wetlands and Deep Water Habitats of the United States. U.S. Fish and Wildlife Service Pub. FWS/OBS-79/31 Washington D.C.

Davies, J. & C.F. Claridge (Eds.). 1993. Wetland Benefits. The Potential for Wetlands to Support and Maintain Development. Asian Wetland Bureau Publication No. 87, IWRB, Special Publication No.27, Wetlands for the Americas. Publication No.11.

Davis, T.J. (Ed.). 1994. The Ramsar Convention Manual: A Guide to the Convention on Wetlands of International Importance especially as waterfowl habitats. Ramsar Convention Bureau, Gland, Switzerland.

RAMSAR SITES OF INDIA

Six wetlands in India have been designated as Ramsar Sites: Sambhar Lake (Rajasthan), Keoladeo National Park (Rajasthan), Loktak Lake (Manipur), Chilka Lake

(Orissa), Harike Lake (Punjab) and Wular Lake (Jammu and Kashmir). In this issue, we provide information on two of these sites, and give selected references on them. The next issue of Buceros will deal with the other four sites.

Wular Lake (Jammu and Kashmir)

Wular Lake (34°21' N & 70°42' E) is located about 34 km northwest of Srinagar city at an altitude of 1530 msl. The entire Kashmir Valley forms the catchment area of the lake, as the river Jhelum which pours into the lake runs across the valley from south to north. According to a WWF booklet the lake area has been computed to be 173 km^2, taking into consideration the highest flood level. The lake is shallow, with a maximum depth of 5.8 m and acts as a huge absorption basin for flood waters and regulates the water regime of the region.

A large number of migratory birds winter in this area. The lake has a number of endangered species of flora and fauna and is an important habitat for fishes. More than 8000 fishermen are benefited - 60% of the fish yield in Kashmir is from the Wular Lake. Many families depend on the lake for food (fish, *Trapa* and *Nelumbo* stem) and fodder (*Phragmites*, *Nymphoides*).

SOURCE: Trisal, C. L. , R. Ivan & M.R.D. Kundangar. 1994. Ramsar sites of India: Wular Lake, WWF India, New Delhi.

SELECTED BIBILIOGRAPHY ON WULAR LAKE

Akram, S.M.M. 1992. Physico-chemical environment of Wular Lake, Kashmir. Dissertation submitted to the University of Kashmir (unpublished). pp. 1-232.

Department of Wildlife Protection, Jammu and Kashmir Government. 1993-94. Wular Wetland Conservation Project (J&K) - A Wetland Development Programme Plan. Sponsored by the Ministry of Environment & Forests, Govt. of India.

Directorate of Ecology and Environment, Jammu and Kashmir Government. 1988. Ecological Restoration Plan for Erin Watershed of Wular Catchment. Ecological Series DEE/3/88-89.

Kaul, V. & A. K. Pandit. 1980. Management of Wetland Ecosystems as Wildlife Habitats in Kashmir. Proc., Seminar on Management of Environment, Feb 1990. (Ed. B. Patel).

Urban Environmental Engineering Department, J & K. 1983. Study of Wular Lake, Kashmir, India.

Pandit, A.K. 1982. Feeding ecology of breeding birds in five wetlands of Kashmir. *Indian J. Ecol.* 9: 181-190.

Kundangar, M.R.D., S.G. Sarwar & M. A. Shah. 1990, 1991. Ecology and conservation of wetland of Wular lake (Kashmir). First and Second Annual Report submitted to Ministry of Environment and Forests, Govt. of India.

Harike Lake (Punjab)

Harike Lake (31°13' N & 75°12' E), located at the confluence of Beas and Sutlej rivers is a part of a larger wetland system in the districts of Amritsar, Ferozepur and Kapurthala. The construction of the 636.12 m long, 10.06 m high barrage near the Harike township impounded the waters of the two rivers creating a shallow water storage reservoir with an average depth of less than two metres. The wetland is spread over an area of 148 km^2, of which 41 km^2 is open water (now reportedly reduced to 28 km^2). The area was declared as a bird sanctuary in 1982. The present size of the Sanctuary is 86 km^2, of which the wetland constitutes 73 km^2.

Harike Lake attracts a large number of migratory birds, including rare birds such as the Scaup Duck *Aythya marila*, Falcated Teal *Anas falcata* and Whiteheaded Stifftailed Duck *Oxyura leucocephala*. The Bombay Natural History Society (BNHS) conducted a bird banding study from December 1980 to 1985 under the guidance of the late Dr. Salim Ali and a total of 167 bird species were recorded during the study period.

SOURCE: Ladhar S.S., M. Chauhan, S.M. Handa & N. Jerath. 1994. Ramsar Sites of India: Harike Lake, WWF-India, New Delhi, 1994

SELECTED BIBILIOGRAPHY ON HARIKE LAKE

Ali, S. & S.A. Hussain. 1981. Studies on the Movement and Population Structure of Indian Avifauna. Annual Report, Bombay Natural History Society, Bombay.

Ali, S., S.A. Hussain, P.K. Gupta & S. Subramanya. 1981. Harike Lake. Avifauna Project Report, Bombay Natural History Society, Bombay.

Ali, S., S.A. Hussain, P.K. Gupta & H.S.A. Yahaya. 1983. Studies on the movement and population structure of Indian avifauna. Harike Research Station Report. Bombay Natural History Society, Bombay, pp. 97-127.

Atwal, A.S., S.S. Bains & M.S. Dhindsa. (Ed.) 1984. Status of Wildlife in Punjab. The Indian Ecological Society, Ludhiana.

Chatrath, K.J.S. (Ed) 1992. Wetlands of India. Ashish Publishing House, New Delhi.

Chief Wildlife Warden, Punjab. 1993. Management Plan: Harike Sanctuary, pp. 1-70 (unpublished data).

Chopra, B.R. 1976. Gazetteer of India, Punjab, Amritsar. Revenue Dept., Punjab, pp. 17.

Department of Forests and Wildlife, Punjab. 1992. Waterbirds of Harike Sanctuary. (pamphlet).

Dhaliwal G.S., B.S. Hansra & N. Jerath. (Eds.) 1992. Changing Scenario of our Environment. Proc., Seminar on the Changing Scenario of Environment. Punjab State Council of Science and Technology and the Punjab Agricultural University, Ludhiana, 1992.

Dhaliwal, G.S., B.S. Hansra & S.S. Ladhar. (eds.) 1993. Wetlands: Their Conservation and Management. Proc., Seminar on Wetland Conservation and Management. Punjab State Council of Science and Technology and the Punjab Agricultural University, Ludhiana, 1993.

Dhindsa, M.S. 1984. Status of Avian Fauna in Punjab and its Management. *In*: State of the Environment in Punjab: A First Status Report. Department of Science, Technology and

Environment, Government of Punjab, pp. 56-59.

Dhindsa, M.S. 1984. Status of Avifauna in Punjab and its Management. *In:* Status of Wildlife in Punjab (Eds. A.S. Atwal, S.S. Bains & M.S. Dhindsa). Indian Ecol. Society, pp. 68-77.

Dhindsa, M.S. & H.K. Saini. 1993. Avian fauna of Wetlands: Their Conservation and Management. (eds. Dhaliwal, G.S., B.S. Hansra, S.S. Dhaliwal & S.S. Ladhar) Proc., Seminar on Wetland Conservation and Management, Punjab State Council of Science and Technology and the Punjab Agricultural University, Ludhiana, pp. 59-70.

Dhindsa, M.S., P.S. Sandhu, J.S. Sandhu & R.S. Sidhu. 1990. Some additions to the checklist of birds of Punjab. *Pavo.* 28 (1&2): 23-28.

Government of India, Ministry of Environment and Forests. 1988. Directory of Wetlands in India.

Government of India, Ministry of Environment and Forests. 1989. Conservation of Wetlands in India.

Government of India, Ministry of Environment and Forests. 1993. Country Report on Implementation of Convention on Wetlands of International Importance, especially as Waterfowl Habitat in India (Ramsar Convention), 1993.

Government of Punjab, Forests and Wildlife Department. 1989. Checklist of Birds of Harike Lake area (unpublished report).

Government of Punjab, Forests and Wildlife Department. 1992. Wildlife Preservation in Punjab. (Booklet).

Hussain, S.A. 1984. Avian Profile of Punjab: An Overview. *In:* Status of Wildlife in Punjab. (Ed. A.S. Atwal, S.S. Bains and M.S. Dhindsa. Indian Ecological Society, Ludhiana, pp. 58-67.

International Union for the Conservation of Nature and Natural Resources. 1990. United Nations List of National Parks and Protected Areas, pp. 105-264.

Jerath, N. 1989. Conservation of Harike and Kanjli Ecosystems. Presented at the National meeting of Wetlands, Ministry of Environment and Forests, Government of India, Puri, Orissa, July 1989.

Jerath, N. 1990. Conservation of Harike and Kanjli Wetland Ecosystem. Report submitted to the Government of India, July 1990, for inclusion in a special issue on wetland conservation in India by the Bureau of Convention for Wetlands of International Importance (Ramsar).

Jerath, N. 1990. Wetland Ecosystems of Punjab. Project Report submitted to the Indian Institute of Ecology and Environment, New Delhi, pp. 9-20, 27-38.

Jerath, N. 1991. The environs and problems of Harike wetland: Some strategies for Conservation. *In:* Wetlands of India. (Ed. K.J.S. Chatrath). Ashish Publishing House, New Delhi, pp. 103-124.

Jerath, N. 1993. Harike Wetland - An Avian Paradise. Punjab State Council for Science and Technology, Punjab.

Kaur, K. & Dhawan, A. 1992. Status of Indian Wetlands and their conservation. *In:* Changing Scenario of our Environment. (Eds. G.S. Dhaliwal, B.S. Hansra & N.

Jerath). Punjab State Council of Science and Technology and the Punjab Agricultural University, Ludhiana, pp. 88-98.

Ladhar, S.S. 1992. Wetlands: Their Conservation and Management with special reference to Punjab. *In:* Changing Scenario of our Environment. (eds. Dhaliwal G.S., B.S. Hansra & N. Jerath). Punjab State Council of Science and Technology and the Punjab Agricultural University, Ludhiana, pp. 78-87.

Ladhar, S.S. 1993. Current Status and Recent Trends of Wetland Ecosystems. The Punjab Scenario. In: Wetlands: Their Conservation and Management. (Ed. G.S. Ladhar). Proc., Seminar Wetland Conservation and Management, Punjab State Council for Science and Technology and Punjab Agricultural University, Ludhiana, pp. 161-175.

Ladhar, S.S. & S.M. Handa. 1992. Status paper on Wetlands of Punjab. A Report by the Punjab State Council for Science and Technology, pp. l-46.

Narang, M.L. & R. Tilak. 1988. Bharoana. A Religious Sanctuary of Waterbirds in Punjab. *Records of the Zoological Survey of India* 85 (3): 455-57.

Perennou, C., P. Rose & C. Poole, 1990. Asian Waterfowl Census 1990. The International Waterfowl and Wetlands Research Bureau and The Asian Wetland Bureau, Slimbridge, U.K., pp. 20-22.

Prasad, M. 1990. Wetlands of India. A Directory. Ministry of Environment and Forests, Government of India.

Punjab State Council for Science and Technology. 1989. Endeavours in Environment. (pamphlet).

Punjab State Council for Science and Technology. 1990. Comprehensive management Plan (Blue Print) for Harike and Kanjli Wetland Ecosystems.

Punjab State Council for Science and Technology. 1991. Coordination of activities for the Conservation of Harike Wetland. Annual Report, 1988-89, 1989-90. pp. 37-38.

Punjab State Council for Science and Technology. 1993. Harike and Kanjli-The Wetlands of Punjab, *Catalyst* 1(1): 2.

Rajamani, R. 1992. Conservation of Wetlands in India. Ministry of Environment and Forests, Government of India.

Randhawa, A.S. 1984. Management of Wildlife Sanctuaries in Punjab. *In:* Status of Wildlife in Punjab (Eds. A.S. Atwal, S.S. Bains & M.S. Dhindsa). Indian Ecological Society, Ludhiana, pp: 154-159.

Randhawa, A.S. 1988. An Explanatory Note on the Identification of Harike Ecological Region. Submitted to the Government of India.

Rodgers, W.A. & H.S. Panwar 1988. Planning a Wildlife Protected Area Network in India, State Summary: Punjab. Wildlife Institute of India, Dehradun, March 1988, Vol. II. pp. 189-195.

Scott, D.A. (ed.) 1989. A Directory of Asian Wetlands. IUCN, The World Conservation Union, Switzerland.

Scott, D. A. & C..M. Poole 1989. A Status Overview of Asian Wetlands. No. 53, Asian Wetland Bureau, Kuala Lumpur, Malaysia.

Singh, G. 1989. Status of Harike Wetland in Punjab. (Abstract). Workshop on Cranes

and Wetlands Research (January 1989). Ecological Society, Pune.

Singh, G. 1990. Harike Wetland and Its Management. (Abstract). Seminar on Wetland Ecology and Management, Bharatpur, India, Feb. 1990. Bombay Natural History Society, pp. 138-139.

Singh, G. 1992. Status of Harike Wetland. *Tiger Paper* 19 (3): 26-28.

Singh, G. 1993. Wetlands: An Ideal Habitat for Wildlife. *In:* Wetlands: Their Conservation and Management. (Eds: G.S. Dhaliwal, B.S. Hansra & S.S. Ladhar). Proc., Seminar on Wetland Conservation and Manage., Punjab State Agricultural University, Ludhiana, pp. 71-77.

Singh G. 1993. A Checklist of Birds of Punjab. Forest & Wildlife Dept., Government of Punjab.

Singh, M.M. 1984. A Case Study of Harike Bird Sanctuary. *In:* Status of Wildlife in Punjab. (Eds: A.S. Atwal, S.S. Bains & M.S. Dhindsa). Indian Ecol. Society, Ludhiana, pp: 52-57.

Toor, H.S., A.K. Chakravarthy, M.S. Dhindsa, P.S. Sadhu & P. K A. Rao. 1982. A Checklist of the Birds of Punjab and Chandigarh. Published by the authors, Ludhiana.

World Wide Fund for Nature. 1993. Directory of Indian Wetlands. WWF India and Asian Wetland Bureau, pp: 263.

World Wide Fund for Nature - India. 1987. Wetlands Status and Management in India: An Overview. Environment Services Group, WWF, New Delhi, pp:1-2.